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ABSTRACT

This monograph, the first of a series of monographs for health planners, focuses on both State and area-wide health manpower planning. Content is presented in four chapters: Chapter I briefly provides background information about the monograph. Chapter II presents the concepts used and the setting within which they are applied. Chapter III describes the basic components of the health manpower planning process and the inputs necessary to initiate and sustain it, and chapter IV details six steps required for plan development. Two appendixes are included which review the steps in planning and describe selected strategies used by health planners to maximize their available resources. (WL)

Number 1

Health Planning Methods
and Technology Series

Health Manpower Planning Process

U.S. Department of
Health, Education, and Welfare
Public Health Service
Health Resources Administration
Bureau of Health Planning
and Resources Development
Division of Planning Methods and Technology
National Health Planning Information Center

Prepared By

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The Division of Planning Methods and Technology, BHPRD, through the National Health Planning Information Center, is a primary resource for current information on a wide variety of topics relevant to health planning and resources development. To facilitate the dissemination of information to health planners, the Center will publish selected monographs in three series:

1. Health Planning Methods and Technology

   This series will focus on the technical and administrative aspects of the health planning process, including such areas as methods and approaches to the various aspects of the health planning process, techniques for analyzing health planning information and problems, and approaches to the effective dissemination and utilization of technical information.

2. Health Planning Information

   This series will focus on data and information to support the health planning process, including sources of information and data for use in health planning.

3. Health Planning Bibliography

   This series will focus on general and specialized bibliographies that relate to topical subject areas in health planning.

Health Manpower Planning Process is the first publication in the Health Planning Methods and Technology Series.

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Preface

This is the first in a series of monographs for health planners. The series is a result of the efforts of many professionals in a variety of fields at the Federal, state and local levels. The work on which each monograph in the series is based was funded by the Health Resources Administration (HRA), Department of Health, Education, and Welfare (DHEW), under a number of contracts with private research firms and health-related organizations. This monograph has been reviewed by a panel of professional health planners from state and local health agencies which has provided many valuable comments and recommendations. The health planning monograph series is published by the National Health Planning Information Center as a service to health planners.* The purpose of the Center, and of these monographs, is to provide health planners with a centralized, comprehensive source of data, information and assistance in the area of health planning in order to assist in improving health care delivery in the United States.

Other topics relating to health manpower planning will be covered in the first issues of this monograph series, including a review of methods for determining health manpower supply and requirements. Other areas of health planning will be covered in subsequent monographs in the series.

*The Center is located within the Division of Planning Methods and Technology, Bureau of Health Planning and Resources Development, HRA, DHEW.

Acknowledgments

This first monograph, *Health Manpower Planning Process*, was produced from material developed by Abt Associates, Inc., and presented in the report "Health Manpower Planning: A Survey of Alternative Approaches at the State Level."* It was determined on completion of the study that this framework — modified by experience gained during the study — could serve as a useful, general description of the health planning process — and thus as a suitable introduction to this monograph series.

Paul Grigorieff, Abt Associates, Inc., Project Director, provided guidance and direction to Abt Associates' staff and consultants under the original contract effort. Paul Schwab served as BHRD Project Officer during the early stages of the contract. The project on which this monograph is based was completed under the supervision of Frank A. Morrone, Jr., Bureau of Health Planning and Resources Development (BHPRD), HRA. This monograph was edited by Jack Lass of Aspen Systems. The appendices to the monograph are based, in part, on work by the Levine Group, Inc., and American Technical Assistance Corporation.

*"Health Manpower Planning: A Survey of Alternative Approaches at the State Level," report of a five-state survey by ABT Associates, Inc. under BHRD contract number N01-MI-34097.

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I. Introduction

The Monograph

Health Manpower Planning Process is derived from a study undertaken by Abt Associates, Inc., for the Bureau of Health Resources Development (BHRD, now the Bureau of Health Planning and Resources Development—BHPRD) of the HRA. The original purpose of that study was to describe through a:

> comprehensive exploration and documentation, in five states, the general characteristics of health manpower planning activities being carried out and the organizational, procedural, and substantive relationships between the various planning activities which might relate them to a "system" for health manpower planning in each state.

The conceptual framework developed by Abt Associates and described in this monograph is based on a review of the literature and contributions provided by their consultants and staff members. It was reviewed by a panel of Abt consultants before it was used to direct field work in the five states surveyed. It has been revised to some extent in light of this field work and as some of the health manpower planning processes became better understood.

A Cautionary Note

It should be pointed out that the orientation of the original study was toward the state, while the focus of the monograph is on both state and area-wide planning. Thus, while it is assumed that the

process of health manpower planning is composed of similar activities and events at both the state and areawide levels, the issues being addressed at one level may not have the same priority on the other level. For example, state planners may be concerned with the *supply* of health workers as a high priority, while local planners may view the *distribution* of these personnel, or their *utilization*, as more germane to their concerns.

By distribution what is meant is simply the question: "Is the manpower in the right place?" It is recognized that this is a narrow interpretation, involving as it does only a single factor, and that it does not deal with, for example, *distribution by specialty* within a health profession. While this latter, significant factor is important in estimating health manpower for planning purposes, only the first factor was chosen in order to maintain the clarity of the conceptual framework. It is fully recognized that both must be considered in implementing the planning process.

Finally, the reader should be aware that assumptions play a major role at every step of the planning process. The reader must remember that each problem identified, each priority established, each action taken or method chosen, is the result of certain tacit or explicit assumptions.

Content of the Monograph

Chapter II, "Definitions and Setting," presents the concepts used throughout this monograph and the setting within which they are applied. Chapter III describes the basic components of the health manpower planning process and the inputs necessary to initiate and sustain it. In Chapter IV are presented the details of the six steps required for plan development. Two appendices are included which review the steps in planning and describe selected strategies used by health planners to maximize their available resources.

II. Definitions and Setting

Introduction

One finding of the study underlying this monograph is that there is little commonality of concept definitions among the health planners at various levels within and between states. In order for there to be fruitful discussion and/or use of the conceptual framework presented in this monograph, therefore, we must define the basic terms and concepts underlying and used in that framework. It is hoped that this will be a useful preliminary to establishing a set of mutually agreed upon terms and concepts which health planners at all levels can use in dealing with the planning process and with each other.

Health Manpower Planning

The first and most basic definition to be established is that describing the field itself. What *is* health manpower planning? In the framework described in Chapter III, it is defined as:

> . . . a process whereby goals, objectives, priorities, and activities for health manpower development are determined in a systematic fashion, in order to ensure that health manpower resources, both current and future, are adequate to meet the requirements for the delivery of health services to a population.

In short, one major concern of health planners is to ensure the proper "manning" of the health care delivery system. They must see to it that the

right number and types of health manpower are available when and where they are needed. They must plan for the human resources to meet the requirements—which include timeliness and acceptable cost—generated by the decisions of health care providers to deliver health services to a defined population group.

To accomplish these goals, health planners must gather two kinds of information. The first concerns the existing stock of manpower in terms of its number and type. The second kind of information concerns present or projected requirements for health manpower. Complicating the planner's job is the fact that planning is, generally speaking, a future-oriented activity. Thus care must be taken to account for the inevitable time lag between planning and implementation. There are many questions which the health planner must consider in this connection. For example, how long does it take to educate a health professional? What are the likely changes in utilization or productivity standards that will result from pending or anticipated legislation? What are the potential demographic changes within the planning area or population that will affect requirements for health care in the future? Planners must strive for a balance between the resources available and the resources required.

The Balance of Resources

In order to achieve such a balance, the planner must consider four key factors:

- Manpower *Supply* — is there enough manpower overall?
- Manpower *Distribution* — is the manpower in the right place?
- Manpower *Utilization* — are providers making the best use of the skills and numbers of health professionals available?
- Manpower *Productivity* — are there ways in which existing manpower can provide more or better services?

Once these four factors have been analyzed, the planner must formulate goals and objectives for

the appropriate health manpower development activities (schools, training programs, etc.) in order to arrive at the appropriate balance between manpower available and manpower required. In addition, these goals and objectives must be set within the constraints of available funds.

As one example, given a shortfall in the overall supply of health manpower available, the planner would most likely give primary emphasis to development of the appropriate health personnel and skill(s) mix through the educational process. In addition, the planner might call for the creation of new education or training programs. Or the planner might suggest the termination or re-orientation of existing education or training programs. The planner might then devise strategies for attracting students to these new or changed programs. Alternatively, given the particular nature of the shortfall, the planner might devise campaigns to attract needed personnel from other states or to reactivate inactive practitioners within the same state. On another front, the planner might campaign for the removal or modification of licensure or other legal barriers to professionals entering practice in the state or locality.

If, on the other hand, the problem was the *distribution* of available manpower, the planner's activities would be aimed at developing incentives that would make relocation to the manpower-deficient area attractive to the available pool of health manpower. The planner might also develop strategies for locating training programs in the manpower-deficient area or for bringing the needed manpower to the area through the use of mobile health units or telecommunications facilities. Alternatively, the planner might develop programs to provide for transportation of patients to providers.

If *utilization* or *productivity* were found to be deficient, planners would have to develop strategies for redefining job descriptions or reassigning tasks. Technology of care delivery would need to

be assessed and staffing patterns in various settings would require reevaluation.*

The Environment of Health Manpower Planning

While, in the past, some of these health manpower development activities have been designed or recommended by planners working alone, the present political environment, the nature of the planning process, and the mandate of recent Federal legislation combine to make health planning a joint venture involving planners, providers and consumers. There are several types of organizations with which planners must work closely. These organizations have both planning and implementation responsibilities in health manpower development, and they must be brought into the planning process at the earliest practicable moment. Four health-related sectors are represented:

- The Education Sector;
- The Professional Sector;
- The Provider and Financing Sector;
- The Planning and Regulation Sector.

The Education Sector includes public and private educational institutions of all types and at all levels. The activities of this sector clearly affect the supply of health manpower. In addition, the location of advanced educational programs has been shown to affect the subsequent distribution of graduates. Utilization and productivity of health manpower are also affected by the activities of these institutions through new and continuing education programs they may offer.

The Professional Sector includes the organized representatives of the health professions and occupations. This sector, too, has a significant impact on the supply, distribution and utilization of health manpower. By instituting active recruiting programs, the groups within this sector can

*The second monograph in this series is a detailed, critical review of several methodological approaches for determining health manpower supply and requirements.

increase the supply and improve the distribution of their professional members. By supporting necessary and appropriate changes in, or revocations of, needlessly restrictive licensing or certification requirements, these groups can directly influence utilization and productivity of their members. Finally, the professional sector also plays a role in the continuing education and, hence, the utilization and productivity of its members.

The Provider and Financing Sector includes all of the agencies, institutions and individual practitioners who deliver health services and organizations responsible for financing health care delivery. This is the firing line — that is, the point toward which the planner aims in formulating a plan for better or increased health services, or changes in delivery, or organizational changes any and all of which are designed to improve health services. It is the health providers' activities which primarily involve utilization and productivity of health manpower. These factors are directly affected by changes in staffing levels, operating procedures, task assignments and the technology of service delivery. In addition, providers can have an impact on the absolute supply of health manpower by furnishing in-service (*i.e.*, on-the-job) training in cooperation with the education and professional sectors. As for the distribution of health manpower, the provider sector can have a primary effect in this regard by the location of its facilities and programs.

The financing component of this sector greatly influences the mix of health manpower skills and the utilization of health manpower. It achieves this influence through the type of health services it will finance, the schedule of payments it establishes for these services, and finally, the type of manpower it will accept as providers of these services.

The Planning and Regulation Sector includes those agencies, organizations, bodies and groups which plan for, license, finance or otherwise regu-

late either health manpower or the delivery of health services. This group typically includes *health planning agencies*, whose plans influence both manpower requirements and the activities that meet those requirements; *state legislatures* which provide much of the funding for health manpower education and which directly legislate licensure requirements for health professionals; *state licensing boards* which regulate the admission and scope of practice requirements for each of the health professions; and *state health authorities* which regulate delivery of state-supported health services and which have a strong voice in deciding which types of manpower are utilized for given health services. There are a variety of other public and voluntary groups also included within this sector whose activities can have a direct impact on health manpower supply, distribution, utilization and productivity.

As is evident from the above, the health planner must work with and consult each and all of these sectors if a plan for the increase or improvement of health manpower availability is to have any practical chance of success.

Plan Development and Implementation

Once the manpower planner has identified relevant activities for each of these sectors — activities that can lead to a balance in the manpower required vs. manpower available — other planning activities come into play. The planner must consider and decide upon the proper mix of activities among the four sectors to ensure that the overall goal is achieved. Next, those activities deemed to be most essential must be given targets for performance. Finally, the planner must turn these goals, objectives, activities and targets into a coherent, practicable and effective plan suitable for implementation by the state or area concerned.

The planner's responsibilities do not end there, however. A plan that is not implemented is an academic exercise. Any plan for increasing the number, or changing the nature, of the health

manpower available to a state or area must involve a host of individuals and groups who will carry out the recommended activities. Thus the health manpower planning process must also concern itself with the proper implementation of the plan. (The health manpower planning process must also encompass the *facilitation* of the plan by providing a coordinating hand and a unitary viewpoint on all of the activities that make up the plan.) This is true because no single program, agency or authority within a state or at the state level is likely to have responsibility for all (or even most) of the activities that will be required of the four (Education, Professional, Provider and Financing, Planning and Regulation) major sectors.

Subsumed under the facilitation concept is a variety of roles which the planning body must play:

- Communication — it is the responsibility of the planning body to communicate the plan both in its overall and detailed aspects to all sectors which have implementation responsibilities, as well as to the ultimate consumers of the health services being planned for.
- Advocacy — often the planning body must play the role of advocate with those sectors that control the implementation of the plan *(e.g.,* legislators, providers, the public, etc.).
- Project Review — the planning body frequently has the responsibility formally to review and comment on the degree to which program activities comply with the plan.
- Monitoring and Evaluation — finally, the planning body must frequently carry out on-going monitoring and evaluation activities to measure the extent to which actual performance of the activities proposed in the plan measures up to the goals and objectives desired.

Because any large-scale health manpower development plan must involve the active participation of all four sectors working in concert, the planner's role can be compared to that of an orchestra conductor. Like the conductor, the

health planner must see to it that the various instruments *(i.e.,* activities) in the "orchestra" are in harmony. Thus, the planner must act as a coordinator. Finally, the planner provides the necessary continuity among the activities of the various sectors (and activities within sectors) to ensure the effective implementation of the plan.

The need for overall organization and administration of the planning process and implementation activities is so striking, in the health manpower planning field, that it is one of the major characteristics distinguishing health manpower planning from other planning activities in the field of health care.

In this chapter we have presented some basic concepts defining the role of the health planner and the environment within which the health planner must operate. The next chapter elaborates on these concepts and roles and describes a framework within which the individual components and processes of health manpower planning can fit and which, taken together, comprise a system for coordinated health manpower planning.

III. Framework for Health Manpower Planning

Introduction

In the last chapter we defined some of the basic concepts of health manpower planning. We also suggested the systematic nature of the health manpower planning process by defining the factors that the health planner must consider in arriving at a balanced manpower availability/requirement equation from which to develop a practical plan. We described how the four sectors with which the planner must interact *(i.e.*, Education, Professional, Provider and Financing, and Planning and Regulation) have varying impacts on manpower availability, distribution, utilization and productivity. In short, we described the context within which the planner must do the work.

In this section we amplify on the *system concept* of health manpower planning and present a framework for that system. This conceptual framework is offered as a "first step" in the development of a systematic approach to the health manpower planning process.

We are describing the conceptual framework of the health manpower planning system "in a vacuum" at this point for the sake of clarity. Later in this chapter we will discuss the environment within which the system operates — that is, the inputs to the system.

Health Manpower Planning Process: A System

It is evident, even on the basis of the brief description offered in the last chapter, that health manpower planning and the health manpower planning process are systems in that they are made up of organized, interrelated activities aimed at achieving a purpose.

Health manpower planning must be viewed as having interrelated components that, in sum, make up a unity or whole. Figure 1 illustrates these components and shows the interrelationships among them. The rest of this chapter will describe the health manpower planning system in terms of the framework presented in this figure and, in the end, show how this conceptual framework *does* represent a unity of purpose aimed at doing three things:

- Creating a plan for health manpower development/utilization;
- Developing a procedure for follow-through

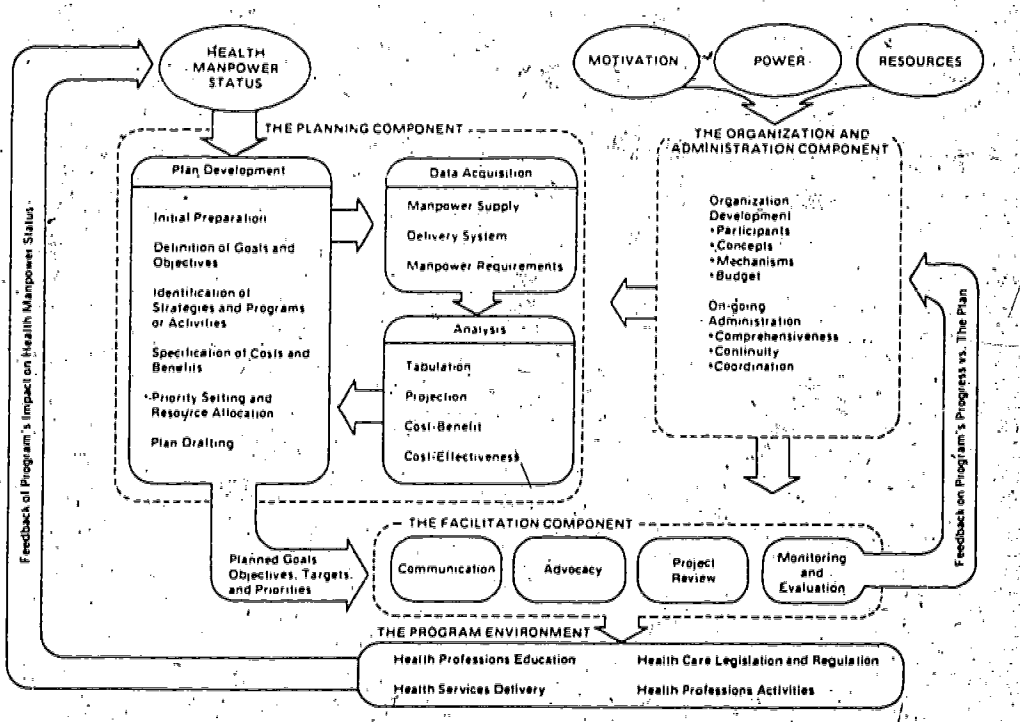

Fig. 1 Health Manpower Planning System Framework

in order to facilitate the implementation of the plan in accordance with the plan's priorities;
- Organizing the complex planning process itself and monitoring the administration of all planning activities.

Components of Health Manpower Planning

A health manpower planning system needs to do three things: 1. plan for health manpower development; 2. follow through to facilitate program implementation in accord with planned priorities; and 3. organize the complex planning process itself and see to it that all planning activities are administered properly.

Figure 1 illustrates three basic components within the "health manpower planning system":

- Planning;
- Facilitation;
- Organization and Administration.

Each of these components, in turn, is composed of distinct processes.

Planning

The planning component is composed of three processes:

- Plan Development;
- Data Acquisition;
- Analysis.

Each of these is equally important in planning. Indeed, these processes form a continuous cycle in the conduct of planning. The process begins with the initial steps in plan development, proceeds to the accessing and analysis of data, and then provides for modifying the initial plan in conformance with the analyzed data. Such a procedure is analogous to a "feedback" mechanism in a machine or electronic device. While all three processes are inextricably linked, their basic functions are sufficiently distinct to require different types of skills.

Plan Development

Plan development is the foundation of the planning process in that the output of this com-

ponent is the plan itself — the solution to the problem which initiated the entire process (see Figure 2). Plan development includes the following functions:

- Initial Preparation;
- Definition of Goals and Objectives;
- Identification of Strategies and Programs or Activities;
- Specification of Costs and Benefits;
- Priority Setting and Resource Allocation;
- Plan Drafting.

Plan development requires the application of criteria and judgment to data which have been analyzed in order to establish a systematic, logical, decision-making process. It is this decision-making process that will facilitate the choice of health manpower development activities that will, in turn, achieve the goals and objectives of the planners and the plan.

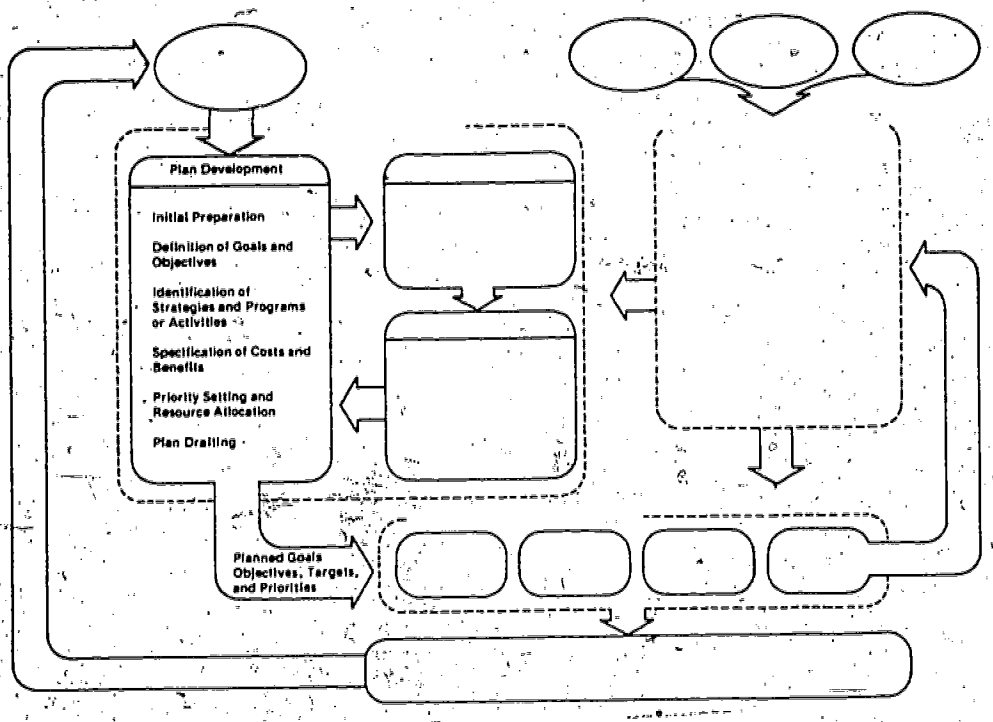

Fig. 2 Plan Development

We stated at the outset of this discussion of plan development that it is the foundation of the planning process. Because of its central importance, we will more fully describe this process and explain the conceptual building blocks of a health manpower plan. (In Chapter IV we describe these steps in detail.)

Figure 3 depicts graphically the logical structure of concepts in a health manpower plan.*

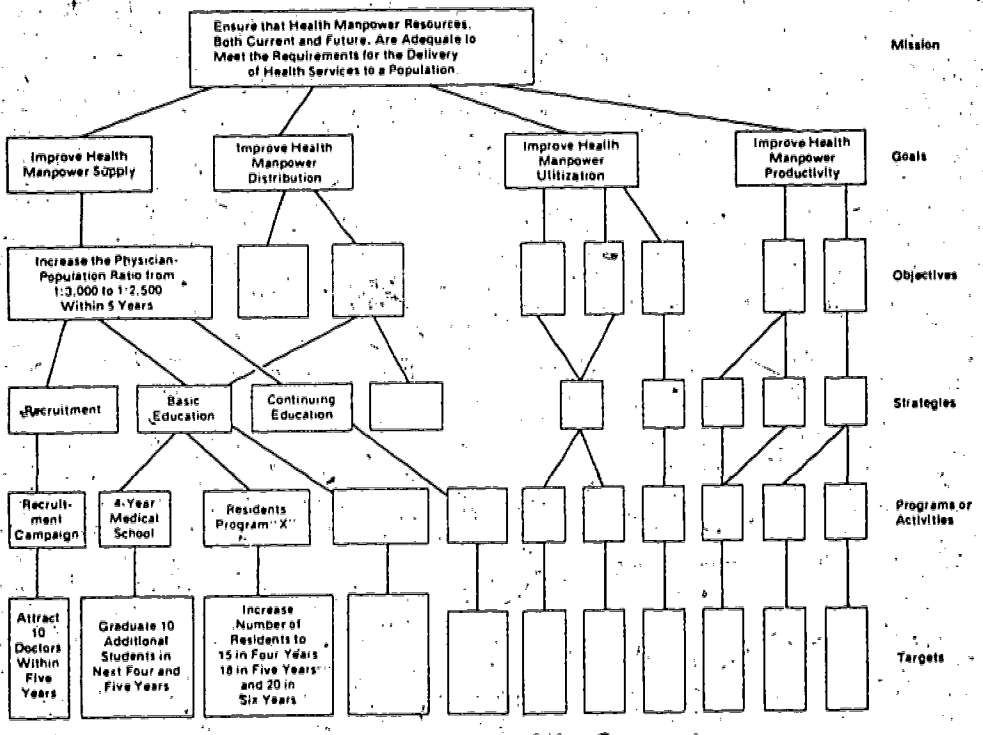

Fig. 3 Logical Structure of the Concepts Involved in a Health Manpower Plan

At the apex of the pyramid is the overall purpose of health manpower planning — to ensure that health manpower is available now and in the future to meet the needs of the required/desired level of health services delivery. To meet this

*This structure is adapted from Reinke, "Overview of the Planning Process," (in) William A. Reinke, Ed., *Health Planning: Qualitative Aspects and Quantitative Techniques.* Baltimore, MD: Johns Hopkins University, Chapter 5, 1972.

overall purpose, the four previously defined factors now emerge as goals of the planning process — namely, to increase manpower supply and to improve its distribution, utilization and productivity.

The achievement of these goals (singly or in combination) will result in the achievement of the overall purpose. In this example, the goals are not quantified for reasons of generality. However, the real-world requirements of legislation, budgetary planning, etc., may dictate that a goal be formulated in terms of a measurable quantity or foreseen amount of change. Furthermore, tradeoffs between and among goals are often necessary to meet the overall goal or mission, given the existing constraints of financing, time, available facilities, etc. While achieving *one* of these goals might be the solution to a given area's health manpower problems, it is far more likely that the solution will require the achievement of some mix of the four goals in order to be comprehensive.

A goal is generally comprised of one or more objectives. Figure 3 shows one objective to be achieved (in realizing the goal of increasing the supply of health manpower) is to increase the physician/population ratio from 1:3000 to 1:2500 within five years. It is important that planners be extremely careful in stating an objective. It is critical to the planning process that objectives be defined in terms of a *measurable* amount or type of change occurring over a specific time period. The practical reason for this is that if a plan is to be implemented it will require the expenditure of funds. Those who provide these funds are not likely to accept a plan that provides neither a cut-off point for expenditure nor a way to measure achievement.

Next to be developed in the planning process are the strategies for achieving the objectives that have been identified. Figure 3 defines three possible strategies for achieving the objective of changing the physician/patient ratio — namely, recruitment, basic education and continuing education.

Each strategy shown in the figure consists of programs or activities. For example, the "Basic

Education" strategy might involve the operation of a four-year medical school, or an expanded residency program at hospital "Y." Possibly a mix of these programs or activities would be required to implement the strategy. The activities and programs are the basic building blocks of the planning process. It is at this level that the objectives, goals and overall purpose of the plan are achieved. Because of this, and for reasons similar to those described above for objectives, planners must exercise care in establishing practicable, measurable targets of performance or output for the programs and activities.

Before proceeding to a detailed, step-by-step description of the functions in the Plan Development process, let us consider the two important supporting processes in the Planning Component —*i.e.*, data acquisition and analysis.

Data Acquisition and Analysis

Data acquisition and analysis are specialized functions requiring the talents and experience of trained personnel. Furthermore, they are functions that are continually on-going throughout the plan development process. Each of the steps in plan development will require some amount and type of data as well as some level of analysis of that data. Thus the data acquisition and analysis processes should be viewed as *pervading* the plan development process.

Data acquisition and analysis are illustrated in Figure 4 as separate boxes to indicate the distinct skills required for the two processes. It should be noted, however, that there is a close link between data acquisition and analysis. For example, in practice, the type of data to be acquired will often be dictated by the analytical techniques available for the specific task. We first discuss the data acquisition process.

Typically, the data acquisition staff will not be involved in primary data collection (that is, in conducting surveys to assess the nature and scope of the problem by interviewing or submitting questionnaires to individual respondents). Instead they will make every effort to use secondary data (that is, data that have already been gathered as part of the activities of such groups as medical or

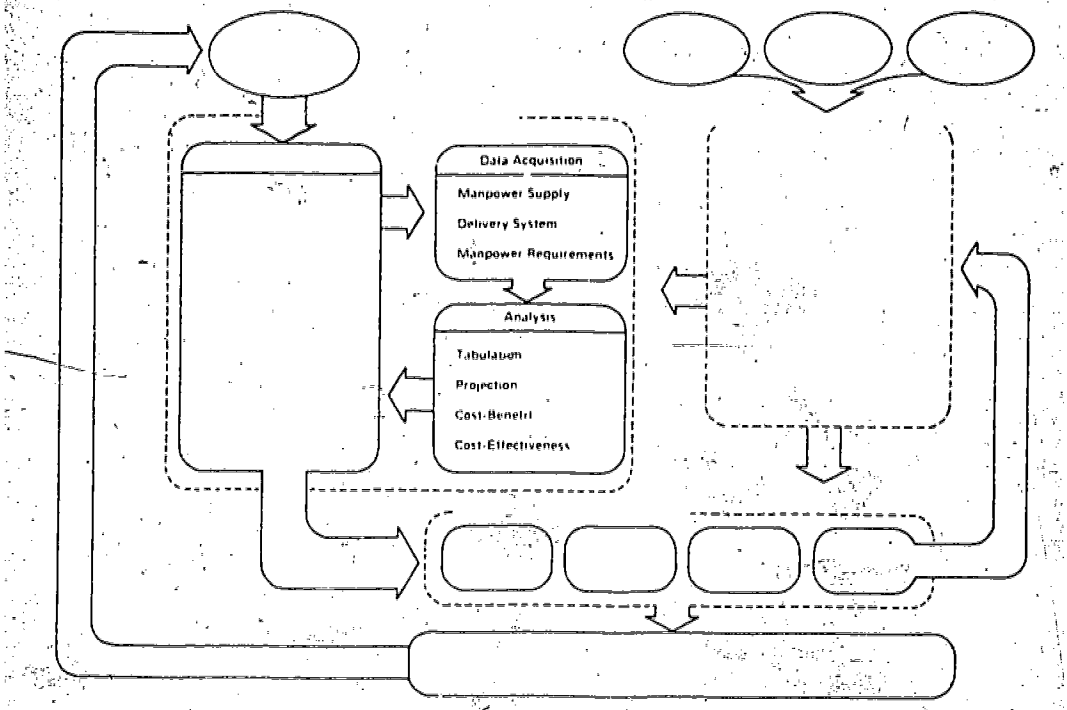

Fig. 4 Data Acquisition and Analysis

nursing associations, state licensing officials, and the like). Thus the special skills required by the data acquisition function will be those of information and reference specialists — people skilled in searching out and using information resources. On those occasions where some primary data gathering *is* required, people skilled in survey instrument (questionnaire) design and testing, as well as in developing statistical cross-sections for surveying, will be required. In addition, where surveys are conducted by mail, someone familiar with mailing techniques should be consulted. In the case of in-person interviews, care must be taken to properly select and train interviewers in order to forestall certain types of bias.

Data acquired at any point in the plan development process will generally require some form of analysis to convert them into usable information on which the planners may act. As with data

acquisition, analysis is an on-going function which pervades the main plan development process. The data analysis staff is likely to require specialized training in statistics, economics, epidemiology, computer analysis, and planning methodology. As a support function for the planners, this staff may be an organization, or organizational entity, separate from the plan development group. Typically, data acquisition and analysis will be an on-going feature of the complete health manpower planning system.

There are a number of types of data required for health manpower planning. They include data on the *supply* of manpower with different skills (*e.g.*, numbers of graduates from various education and training programs, migration of health personnel, attrition from the labor force, number of health personnel in practice, specialties available in the labor force, etc.). On the *requirements* side, data must be gathered on the demography of the area being planned for, the characteristics of the existing health care delivery system (*e.g.*, numbers and types of services, staffing patterns, location, etc.), and area, state, regional or national standards against which local health manpower requirements may be determined.

Analysis of the data acquired at any stage of the plan development process may be simple or complex, depending on the sophistication of the planning methods being used. At the simplest level, analysis is the organization of data into tabular or chart form so that it can be easily displayed and comprehended. This type of analysis may also involve computation of simple statistics such as manpower/population ratios or the means, medians, modes and other statistical measures describing manpower or population groups.

More complex types of analysis involve the development of cost-benefit or cost-effectiveness ratios which can be used to clarify the tradeoffs between different programs or activities that could be used to achieve the objectives of the plan. Finally, and most complex, there is the

simulation model approach to analysis. This approach mathematically illustrates the relationships between the production and utilization of health manpower. It enables the planner to "test" a variety of health manpower development plans to determine which one(s) will serve the purpose of improving health care delivery. The simulation model requires a high level of resources in terms of highly trained personnel and computer facilities. Thus, it is generally reserved for well-funded, large-scale project planning.

The health planner's role (as planner) culminates in the development of a "final" plan suitable for implementation. However, the planner's role does not end there. First, of course, any "final" plan must exist within a dynamic environment. Thus, even while a plan is being implemented, conditions and requirements may be changing sufficiently to warrant some modification in either the goals or strategies of the plan. The planning component must constantly be evaluating data (provided by the data acquisition and analysis processes) and testing the goals and strategies of the plan against the changing reality of the planning area. This is not to say that the plan may never go forward to implementation. On the contrary, it is this need to maintain a constant professional overview of the goals of the plan and the requirements of the planning area that necessitates the planning group's participation in the second component of the planning framework —Facilitation.

Facilitation

The facilitation component of the framework (Fig. 5.) is concerned with ensuring the fullest possible implementation of the plan by the individuals and agencies concerned — typically, the agencies responsible for operation, budgeting regulation and legislation of programs for health manpower development.

There are four processes which the planner as facilitator can use to "encourage" compliance with the priorities of the plan:

- Communication;
- Advocacy;

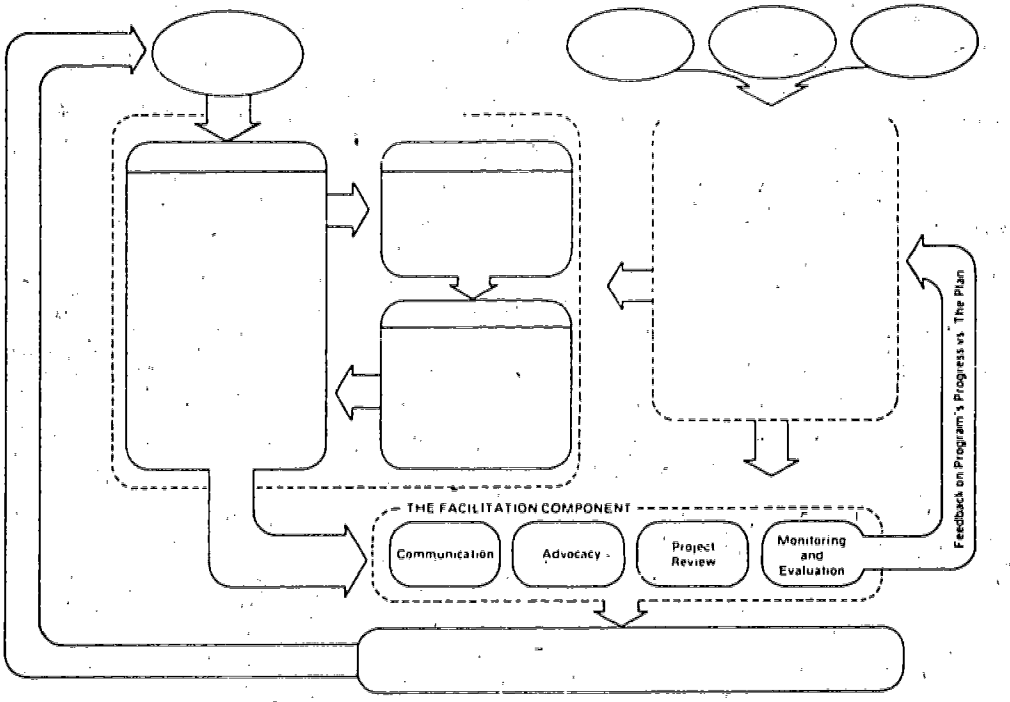

Fig. 5 The Facilitation Component

- Project Review;
- Monitoring and Evaluation.

These processes are listed in order of increasing influence by the planning body over the actual implementation of programs. Monitoring and evaluation are the on-going process which supports the other three.

Communication

The communication process is needed to disseminate the results of the planning component to those who will participate in, or be affected by, implementation of the plan. Note that, while the implementors of the plan have been part of one or more aspects of plan development, the overall structure of the plan—goals, strategies, activities, etc. — must be made clear to all participants once implementation begins. Furthermore, all of the necessary detailed information (*e.g.*, plans, problem statements, analyses of the status of health

manpower, data developed and targets set) must be given to those who must use them. In short, program operators cannot adopt and implement plans they have not seen in full form, nor can unpublished data be used to support requests for funds for such implementation.

The creation of good communications channels should begin during the plan development process. These channels serve the planning component well in the case where a planning group is not simply sitting down and developing an overall plan for all activities under the planning group's jurisdiction. In many cases the planning process will involve going from one program operator to another to explain general goals and objectives and to obtain data on capacities and orientations — in effect, negotiating program plans on a case-by-case basis. Since many of the same program operators who have provided input *to* the plan will be those concerned with implementation *of* the plan, good communications established early will "facilitate" plan implementation.

Communication methods include: publication and distribution of plans, priorities and other data produced during plan development; publication of newsletters on planning programs; holding of seminars to describe and discuss planning issues or findings; and convening of advisory panels to provide information from a variety of viewpoints and disciplines. Such advisory boards frequently include representatives of providers, consumers, educators, planners and government officials.

Advocacy

The advocacy process is a stronger tool for encouraging the adoption of the final health manpower development plan. Advocacy entails the active intervention of planners in the processes of public and private decision making concerning health manpower development issues.

Activities that fall under the definition of advocacy could include: testimony before legislative committees considering health manpower issues; writing of position papers describing the impact of certain decisions on the status of health

manpower in the planning area; or organizing of public, provider, professional or educational interests in support of — or opposition to — various health manpower development initiatives. Because of the high visibility of advocacy, planners must be sure that they are accurate in their statements and that their plans are based on the best available data.

Project Review

The third process in the facilitation component, project review, is even stronger in its impact on implementation of the plan. The project review process:

> . . . involves the analysis of proposals for initiation, change or addition to health services and programs. Authority to conduct such reviews has been established by the individual states and the Federal Government.*

It is the responsibility of the health planner to convert these proposed modifications to existing health services and programs into requirements for health manpower — in terms both of number and skills mix. The planner must then, as part of the review process, assess whether or not the proposed modifications can be realistically undertaken given the existing (and potentially available) resources.

Monitoring and Evaluation

Monitoring and evaluation are the last process to be discussed under the facilitation component. A planning agency exercising this process can oversee program efforts to determine whether or not they are achieving their targets. Monitoring involves continuous information-gathering on operational programs, while evalua-

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Guide to Comprehensive Health Planning, Arthur Young & Company, Distributed by Technical Assistance Branch, Division of Comprehensive Health Planning, U.S. Department of Health, Education, and Welfare.

tion involves judgmental decisions on the extent to which these programs are performing as planned. The results of the monitoring and evaluation process may be individual evaluation reports on the various programs, or they may consist of regular consideration and review by the planning body of overall program progress vs. the plan.

Organization and Administration

The third component of the conceptual framework is organization and administration (Fig. 6.). The purpose of this component is "planning for planning" and then overseeing the operation of the planning system to ensure its success. There are two processes involved in this component:

- Organization Development;
- On-going Administration.

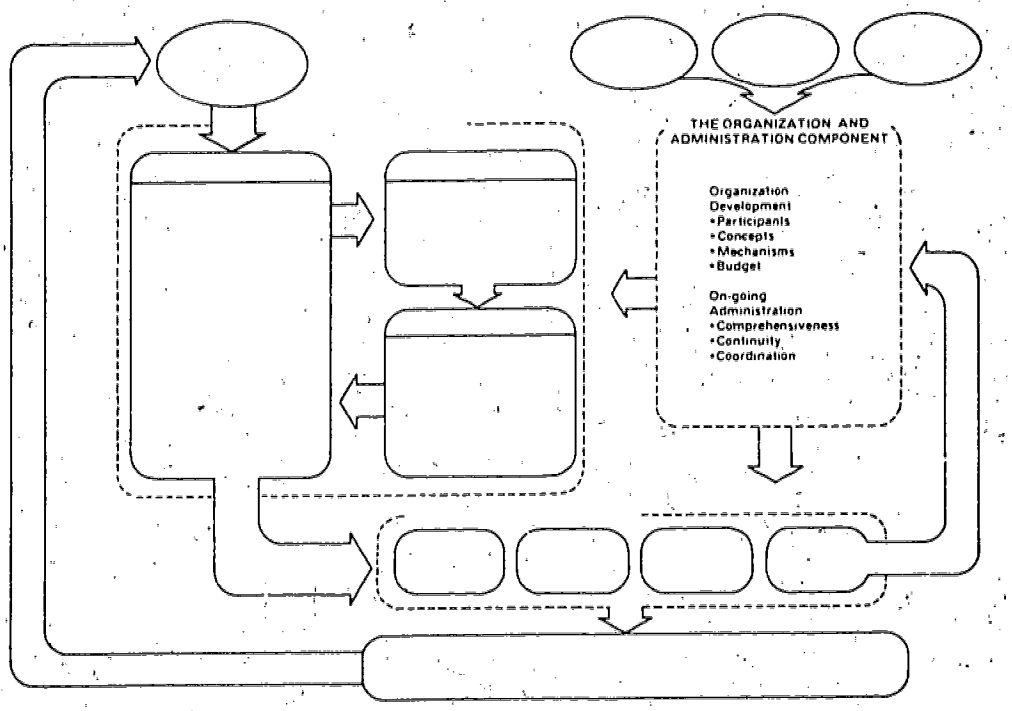

Fig. 6 The Organization and Administration Component

Organization Development

This is the process of setting up the planning and facilitation components of the planning system. It means ensuring that there is sufficient organizational capacity to handle adequately all of the steps and functions involved in planning. This process involves locating those who should participate in the planning process and assuring their participation; ensuring the availability of adequate funds to finance the planning activity; identifying and locating the technical skills and analytical tools needed to perform the planning functions; and, finally, developing a conceptual framework for the planning group — that is, developing an overall purpose toward which the planning effort should aim.

If the organization development process is successful, a planning organization will be established — with all of the necessary resources — to solve adequately the health manpower problems which are identified. One criterion of adequacy might be the comprehensiveness of the planning process in terms both of the issues it addresses and the number of participants and processes included in the planning.

On-going Coordination

On-going coordination means continuing supervision of the performance of the planning system to ensure that it is accomplishing its goals and objectives as effectively as possible. This is achieved by taking management actions to improve and maintain system effectiveness. This requires both continuity of policy and coordination of effort. Continuity is involved so that health manpower planning activities start, stop and are continued in a sequential (or otherwise logical) fashion within a given component or across components. Coordination ensures that the different planning activities, perhaps being performed by different agencies, are integrated to achieve a properly comprehensive health plan.

The organization and administration component of the framework can be performed by the

planning body itself, or by a separate administrative component. Such a separate administrative component would typically be part of a larger institution or developmental unit with a legislative mandate for planning.

Unity of the System

In this chapter we have described the components of a conceptual framework for the health manpower planning system. We stated at the outset of the chapter that in order for health manpower planning to be considered a system, components must add up to a unity of purpose in developing and facilitating the implementation of a health manpower development plan and in organizing and administering the planning process. We believe that the foregoing description demonstrates that health manpower planning is, indeed, a systematic discipline that can serve the purpose of improving the supply, distribution, utilization and productivity of health manpower.

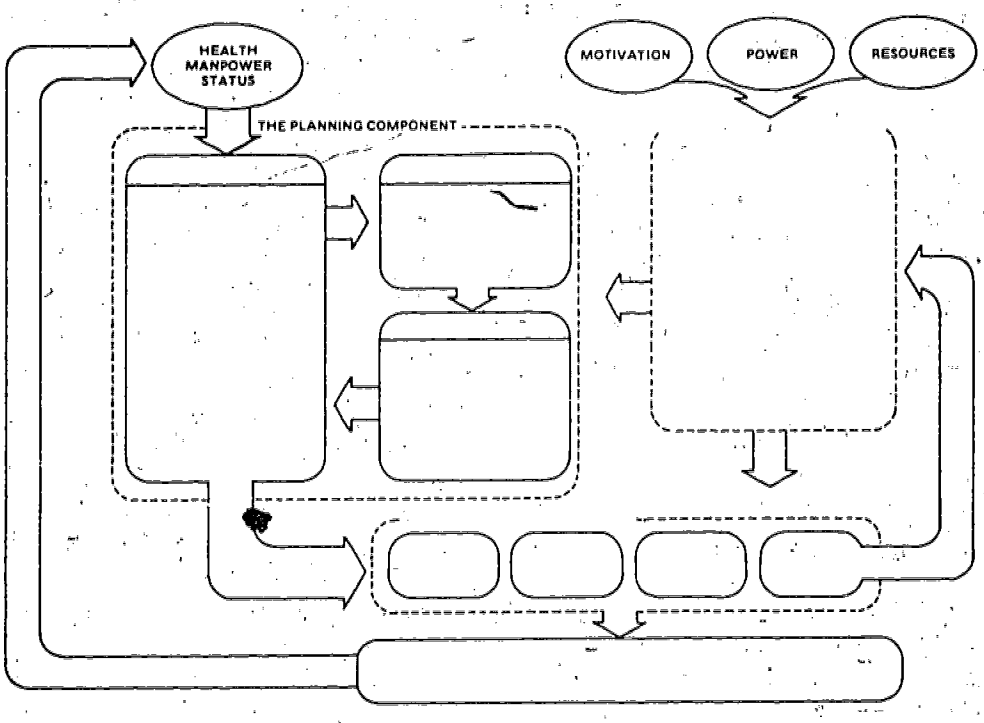

Fig. 7 Inputs to the System

Inputs to the Health Manpower Planning System

There are four main inputs (Fig. 7.) that engender the establishment of a health manpower planning system in a given area:

- Health Manpower Status;
- Motivation;
- Power;
- Resources.

Health Manpower Status

The first of these inputs, health manpower status, is an indicator developed by analysis of the supply of, and requirements for, health manpower in a planning jurisdiction. Supply is defined as the active health manpower and the inactive health manpower seeking work in a given geographic area. Requirements are defined in terms of the manpower necessary to produce and deliver a given level of various health services to a defined population group. There are several dimensions within the health manpower planning process that this indicator can explore:

- Type of Manpower — physicians, registered nurses, occupational therapists, etc.
- Type of Problem — supply, distribution, utilization and productivity of the above types of personnel.
- Geographic Base — health service area, metropolitan area, a county or counties, a state or an interstate region.

Estimating requirements is one of the most difficult tasks in health manpower planning. However, as an indicator, health manpower status is a primary tool in measuring the changes brought about by implementation of the plan. It provides feedback to the planning component to ensure that the planned-for changes in health manpower status in the planning area are indeed being achieved.

Motivation

This leads to discussion of the second major input to the system, *motivation*. Motivation for developing and continuing a planning system can take many forms. It may be a legislative mandate to act to increase one or more types of health manpower. It may be the perception of a severe

deficiency in availability or distribution or any other factor involving health manpower. It may be pressure exerted on participants to get them to plan. Whatever its genesis, motivation is critical in starting up the planning process.

In the absence of a legal mandate to plan, the question of motivation boils down to whether those who should participate in planning perceive a high enough level of benefits: for example, *to the public* — in terms of improved accessibility or quality; *to providers* — in terms of improved productivity or lower developmental costs; or *to professionals* — in terms of improved utilization or training of members of the profession — all in relation to the costs of planning.

Power

The third input, *power*, refers to the availability of some form of power sufficient to ensure that all the activities in all three components of the conceptual framework are carried out. Power, whether a legal mandate or informal influence, is crucial to the success of the planning process. It is necessary in order to get appropriate participants to supply data, participate in planning or implement programs in accordance with the plan; in short, to do things they might not otherwise be willing to do.

It should be evident, however, that by power we do not mean power in the coercive sense. Rather, what is meant is the legal or social authority to enlist the cooperation of all necessary participants. Cooperation is the keystone of successful planning.

Resources

The final input to the system is *resources*. In the end, adequate resources — in terms of money, personnel and information — are the absolute and indispensible requirements if planning is to be more than talk.

Results of Planning

The result which the planning process is designed to achieve can be expressed as a change in behavior on the part of the programs, agencies, groups, institutions and individuals which make

up the program environment shown in Figure 1. Such changes in behavior, translated into changes in detailed program plans, budgets, legislation, professional performance standards, employment practices, and the like, will result in a change in the status of health manpower for that area and population with which the planning body is concerned.

These changes, then, are the measure of the final impact of the planning process. The long feedback arrow in Figure 1 which connects the program environment with the health manpower status indicator symbolizes this impact. Furthermore, it is the channel through which information updating the nature of the area's health manpower problems flows. It is this updated information with which the planning process will have to deal in the future.

IV. Plan Development Step-By-Step

Introduction

The plan development function is the crux of the health manpower planning system. The end result of this function is the health manpower development plan — the blueprint for improving health manpower supply, distribution, utilization and productivity in the planning area. The administration component has concerned itself with the proper functioning of the planning component in order to assure the successful development of the plan. The facilitation component will concern itself for a significant period of time with fostering implementation of the plan. The four inputs to the system will continue to interact with the system to feed back information about the effects the plan is having on the health manpower requirements of the planning area. In this section we will provide a step-by-step description of the processes whereby the plan itself is constructed during the plan development function.

Step 1. Initial Preparation

The first process, initial preparation, is predominantly organizational. For plan development to proceed in an orderly and effective manner, it is imperative that initial preparation be thorough and comprehensive. Factors that must be considered during this process include:

- Planning Group Organization — How will the planners work?

- Participants — Who will serve on the planning body?
- Resources — Is there enough money, staff, time, authority, to do the job?
- Planning Capacity — Do the participants understand what planning is as well as they understand their own professions?

Because these factors are so important to the eventual success of the plan development function, there must be some central direction during the initial preparation process. Thus it is critical that an individual or group with the appropriate (*e.g.*, Federal or state) legal mandate and/or the social initiative be responsible for organizing and convening the plan development process. It is equally important that the convener-organizer understand the proper functional and conceptual framework for the entire planning process. This will assure the selection of properly qualified participants and staff, and permit monitoring of the participants' performance during the planning and facilitation processes. The end result of initial preparation should be a sound organizational and conceptual base on which the plan development process can rest, and which relates plan development activities to both the facilitation and ongoing organization and administration components of the health manpower planning system.

If sufficient preparation is not made, important participants may be excluded or overlooked; planning functions may be carried out in an uncoordinated or haphazard fashion (or be neglected entirely); there may be no effective method for follow-through between planning and implementation; or the plan development component may succeed in collecting and analyzing a mass of data but be unable to formulate an intelligible or practicable "plan."

Step 2: Definition of Goals and Objectives

This is the first substantive task in plan development. It requires that the planning body obtain sufficient information on the current health manpower situation in the planning area in order

to determine the "baseline" status of health manpower. This will provide a measure against which the results of plan implementation can be compared.

Where does the planning body get this information? There are two basic resources that the planning body can tap at this stage of its existence — these are:

- Personal Knowledge/Experience — presumably the planners represent the programs, activities and institutions which have, or can do something about, the problem. They should have (or have access to) data on the problems and manpower status in the planning area.
- Data Acquisition and Analysis — the data acquisition and analysis staffs should be functional enough at this point in the planning group's evolution to provide the basic information on health manpower supply and requirements in the planning area.

Often it will be found that a combination of both of these resources will be used to collect the initial baseline information.

Once the current health manpower situation has been clearly determined, the planning body must define the goals and objectives necessary for solving the problem or problems (*e.g.*, increasing supply, improving distribution, etc.) that the initial data acquisition reveals. These goals and objectives should be stated clearly and in terms of measurable progress in alleviating these problems.

To accomplish this, goal definition agreement should be obtained from all planning participants as to the overall mission of health planning. The mission statement in Figure 3 is broad and general. Some of the participants may have a more restricted point of view — an institutional budgeting process, for example. This sort of basic disagreement on the overall mission of planning (and more specifically, of the particular planning project in question) should be clarified and recon-

ciled as early as possible in the process. This will avoid disagreements in later stages of the plan's development and implementation.

The definition of goals and objectives is an iterative process. It is performed as often as necessary to arrive at an optimum set of goals and objectives based on the constant feedback of more — and more complete and accurate — information. While this process can, theoretically, go on "forever" there must come a point when the planning body presents the "final" definitive set of goals and objectives for the plan.

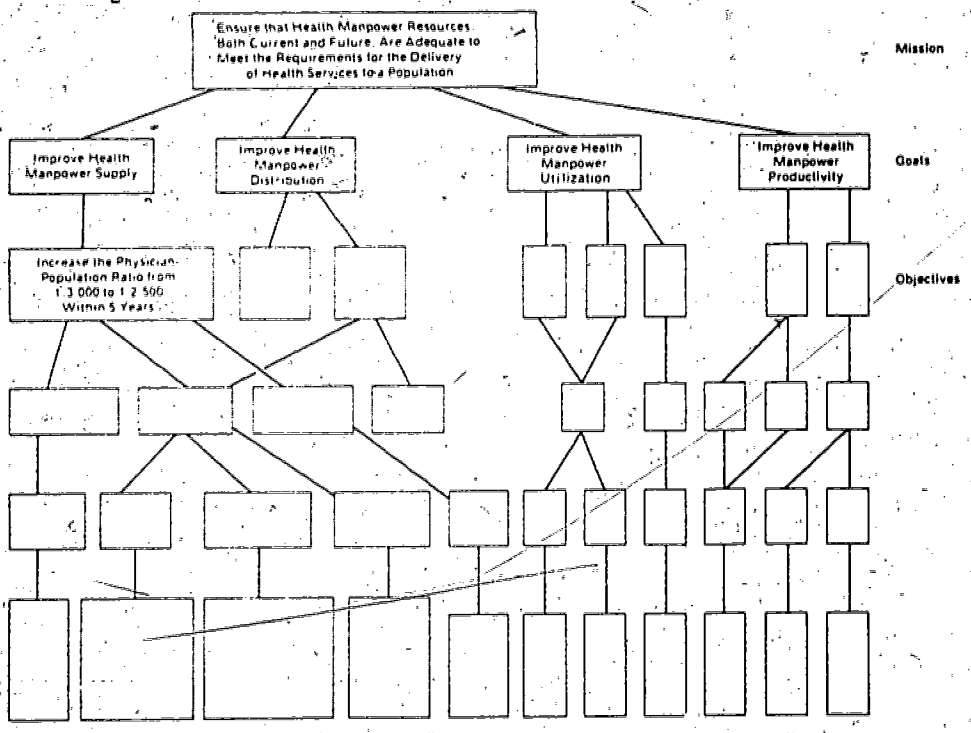

Fig. 8 Mission, Goals and Objectives

How does the planning body know when it has chosen the "right" goals and objectives or that these are sufficiently accurate and detailed? Practically speaking, it never reaches that point. There are no intrinsically right goals and objectives;

these are a matter of judgment. Furthermore, the nature and extent of the data acquired and analyzed to arrive at these goals and objectives are also a matter of judgment. There are also the added constraints of budgetary limitations and the difficulty encountered in gathering the data in a given case. While a number of different standards and criteria have been developed for formulating or assessing goals and objectives in health planning, these, too, are matters of judgment. The health planner must be aware that there is no cut-and-dried solution to converting information on health manpower status into a measure of "what ought to be."

The health manpower requirements which are determined by the planning body will vary according to the method or standard chosen. The method chosen will, in turn, vary according to perceptions and orientations of the participants; the nature and availability of staff skills; the availability of data; and other resource constraints that may be present. Whatever the criteria, the goals and objectives set by the planning body must be in consonance with the health manpower requirements that have been determined.

Step 3. Identification of Strategies and Programs or Activities

Once it has established the goals and objectives of the plan, the planning body must accomplish two tasks:

- Identify programs or activities whose outputs will achieve the specified objectives;
- Group these programs or activities on the basis of the problem solving strategies selected.

Determining the correct strategies is a flexible process. Often, to arrive at an optimum set of strategies, the planning body will have to utilize a process of trial and error. The goal is to define strategies that accurately reflect the available range of problem-solving approaches (*e.g.*, training, education, recruitment, etc.), and in defining these strategies, to encompass all of the programs or activities available to implement them. Such activities or programs might include

training programs, continuing education activities or four-year medical schools.

As an example, the goals shown in Figure 8, "Mission, Goals and Objectives" have as one objective increasing "the physician/population ratio from 1:3,000 to 1:2,500 within 5 years." Activities for accomplishing this objective might include establishing or expanding an existing educational facility, or expanding residency programs in hospitals within the planning area. All of these fall under what might be called the basic education *strategy*. Another strategy might be to actively recruit physicians from outside the planning area. This might involve the creation of a recruitment campaign. Another strategy might involve providing incentives for physicians to come to, or remain in, the planning area. This could involve programs and activities for building new facilities, or for providing subsidies of one type or another.

To develop appropriate strategies for meeting the goals and objectives of the plan, the planning body requires good, up-to-date information on the programs and activities currently on-going in the planning area and those that are planned for the near future. Finally, it is the planning body's critical and creative processes that will determine the strategies (and the programs and activities to implement them) that must be used to achieve the goals and objectives of the overall plan.

The result of this process may be a list of a dozen or more strategies involving, perhaps, hundreds of programs or activities with the aim of achieving a number of objectives or goals. At this point the plan development process becomes one of priority setting. The planning body must "negotiate" the best mix of strategies and programs to meet the overall mission within the time and financial constraints that are present. This leads to Step 4.

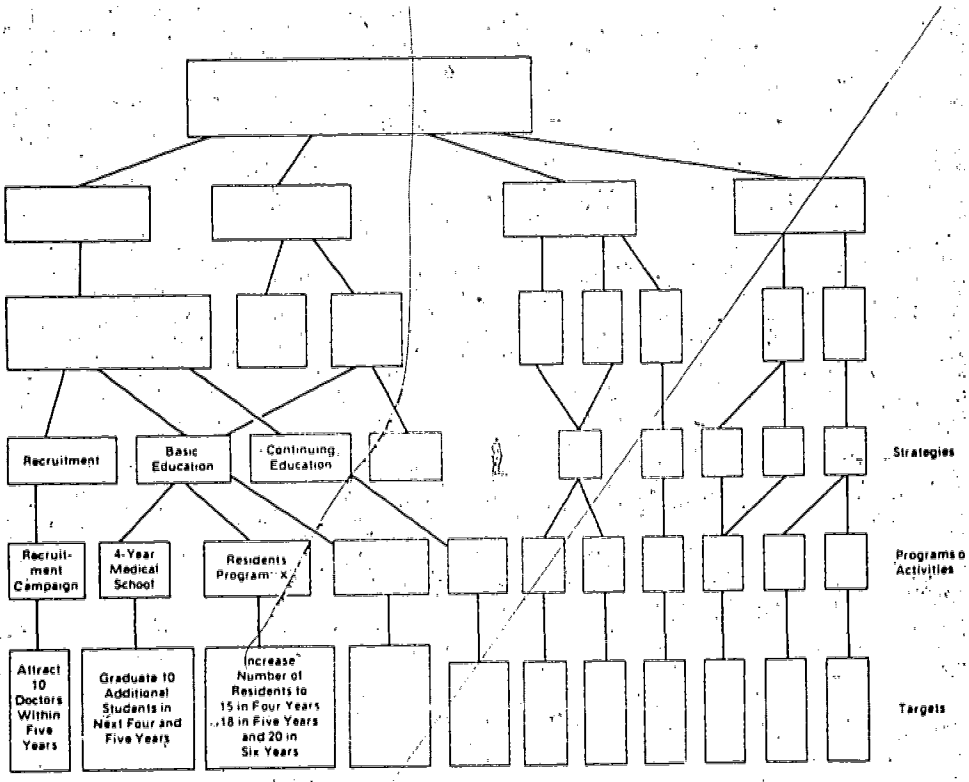

Fig. 9 Programs or Activities, and Targets

Step 4. Specification of Costs and Benefits

One of the main constraints in selecting programs and activities to implement the planning strategies chosen is cost. The planning body must have some measure of costs vs. benefits for each program or activity in order to measure both its effectiveness in meeting the objective, and its practicability. To derive such a measure, the planner or program analyst must quantify the output of the program or activity in some way. For example, in our previously cited objective (increasing physician supply) one measure of an education program's effectiveness might be the number of physicians trained per year. Given this figure, the planning body can readily determine whether the program can meet the objective. The planning body must also take into account the program's cost, working from the program's budget or directly determining the costs of the various inputs of the program or activity (*e.g.*, plant, salaries, scholarships, etc.). This must be done for each program or activity under consideration, in order that the planning body be able to compare them on as objective a basis as possible.

Step 5. Setting Priorities

In the mythical "best of all possible worlds" there are always sufficient resources of time and money to fund all plans and programs. For the health planner, however, the situation is not as bright. And one of the most important steps in plan development is establishing priorities, both within and across the boundaries of the objectives set during Step 2, and across and between the strategies (and the implementing programs and activities) identified in Step 3. The planning body must exercise its judgment in deciding which objectives are most worth achieving and the best means of achieving each of these objectives.

The measure used for determining the optimum trade-offs among objectives is the contribution that achieving a given objective makes toward improving the status of health manpower in the planning jurisdiction. In like manner, the measure used to determine the best strategies (with their concomitant programs and activities) is their effectiveness in achieving selected objectives.

Making these trade-off decisions usually requires the planning body to use such tools as cost-benefit or cost-effectiveness analysis. These methods rank the different combinations of objectives, strategies, programs and activities according to the amount of "payoff" they produce in meeting the planned goals relative to their costs. In *cost-benefit analysis* the benefit expected from a program or activity is examined in relationship to the cost of that program or activity. The ratio of cost to benefit is developed, thus permitting comparison of programs and activities on a common basis. *Cost-effectiveness* analysis is generally used in estimating the degree to which an objective is achieved by the proposed program or activity in health care delivery; for example, the improvement to be expected by training two nurse practitioners rather than one physician.

Both of these methodologies will probably find use during the project review process of the facilitation component as well as in plan development.

They provide reasonably objective methods for judging the advisability of implementing those proposals that meet the initial criterion of relevance to — or consonance with — the stated objectives and goals of the formal plan.

Usually, program/objective combinations with lower cost-benefit or cost-effectiveness ratios will be chosen for implementation. This is because the lower the ratio, the higher the return (in terms of meeting the planned objectives) for a given level of investment.

While it may seem that priority setting requires a massive amount of analysis in order to assure a fair assessment of all combinations of objectives, strategies, programs and activities, there are frequently other factors which will limit the choices that the planning body can make. Some strategies may be ruled out because the planning body does not have the cooperation of the key agencies controlling program implementation in the planning area. Other strategies may be too long-term to meet the immediate health manpower needs of the planning area. In other cases, participants in the planning process may overwhelmingly favor one set of approaches over another.

However it chooses to arrive at its priorities, the planning body must formally establish and carry out some priority-setting method in order to limit the program approaches available to a practicable number. Furthermore, this method must recognize the interdependent nature of many of these approaches to solving the problem. It must be flexible enough to utilize updated information to increase the breadth and systematic nature of its search for, and analysis of, problem-solving alternatives.

Step 6. Plan Drafting

This is the culminating step in the plan development process. At this point, the planning body must combine the strategies and programs which have been determined to be both effective and practicable as a result of the preceding steps and present them in a format suitable for implementa-

tion: They must, in other words, provide a series of guidelines for those responsible for implementing the plan.

To produce these guidelines, the planning body must develop two additional items during this step: targets of performance for all participating programs or activities; and a description of the resources and organization necessary to carry out these (or new, or planned) programs or activities.

By establishing targets of performance, the planning body makes it possible for the participating programs and activities to know what is expected of them. It further makes possible the measurement of each program's performance during the implementation of the plan. Targets are established on the basis of the data gathered and assumptions made as to what the various, potential participating programs or activities could achieve. Indeed, these estimates of achievement were a primary basis for choosing the preferred programs and activities in Step 5. It is important, therefore, that the plan be as explicit as possible in setting forth what is expected from each participating program or activity.

Once the full range of recommended programs or activities has been decided upon, and the targets for each have been established, the planning body can make a reasonable estimate of the resources required to ensure the successful and coordinated implementation of the plan. Items to be determined include: budget, staff, administrative arrangements and organization structure. Establishing levels and types of resources for these items is important, since the planning body is often involved in soliciting support for these elements of the plan from various groups, agencies and governmental authorities.

As an alternative to publishing its determinations and findings as a "plan," the planning body may first decide to adopt or publish a set of goals, objectives and priorities for program implementation, which it then uses on a "case-by-case" basis for program review.

Appendix I is a brief summary of the steps in the plan development processes that have been described in this chapter.

Summary

No matter what approach the planning body takes, it must in the end communicate its findings. These findings must be implemented to solve a health manpower problem. This leads us back to the facilitation and organization and administration components. While the steps and activities of the planning component are the foundation of health manpower planning, only through the interaction of all three components can these activities culminate in meeting the mission of the health manpower planning system.

All of the foregoing discussion has been aimed at providing the planner with an understanding not only of the discrete (but interrelated) steps involved in developing a plan, but also of the dynamic nature of the planning process and the environment within which that process must function. Health manpower planning is an evolutionary process designed to assure that the manpower required to deliver health services to a population is available when and as needed. The planner must always be ready to change, adapt and redirect the plan as the population and its needs change.

Appendix I: Review of Steps in Plan Development

Step 1. Initial Preparation

Developing the organization, process, participants and capacity for plan development.

Requires

- An individual or group with the mandate and initiative to organize and convene the plan-development process and oversee the implementation of its results.
- Participation by representatives of the programs, institutions, or groups which may be affected by the implementation or results of the plans produced.
- Knowledge of a conceptual framework for health manpower planning and plan development, and an understanding of how the technical skills and formal responsibilities of the various planning participants fit into this framework.

Involves

- Determining the appropriate boundaries and expectations for the planning process.
- Organizing the plan development process according to these expectations.

Step 2. Definition of Goals and Objectives

Definition and understanding of the mission, goals and objectives of health manpower planning.

Requires

- An understanding of the relationship between health manpower planning and other types of planning in terms of the impacts to be achieved on the delivery of health services.
- Knowledge of the existing status of health manpower and an understanding of the health manpower problems.
- Ability to translate data into health manpower requirements.
- The availability of criteria and judgment for determining proper goals and objectives for health manpower development.

Involves

- The application of criteria and judgment to measures of the current status of health manpower development in order to specify health manpower requirements and to define goals and objectives for future activities related to health manpower development.

Step 3. Identification of Strategies and Programs or Activities

Identification of strategies and programs or activities associated with the achievement of identified objectives.

Requires

- Knowledge of the different strategies which can be employed in order to achieve each of the identified objectives.
- Knowledge about the nature of current or possible future programs or activities which are associated with each strategy.

Involves

- Producing a list of many possible combinations of strategies and programs or activities which may be directed at the achieve-

ment of objectives of interest to the planning body.

Specification of the costs and benefits associated with achieving different objectives through different combinations of strategies and programs or activities.

Step 4. Specification of Costs and Benefits

Requires

- Information on the costs and benefits of the outputs of individual programs or activities.
- A means of expressing these costs and benefits in comparable terms.

Involves

- Listing the costs and benefits of all programs or activities under consideration (in comparable terms, if possible).

Setting priorities among alternative strategies and activities for achieving alternative objectives.

Step 5. Setting Priorities

Requires

- The availability of criteria, judgment and methods of analysis for setting priorities.

Involves

- Balancing the emphasis on the various strategies and program activities under consideration such that roughly equal returns (in terms of achievement of the overall mission of health manpower development) are being achieved from all the different investments being made in programs.
- Selection of those strategies and program activities which are thought to be most cost-effective in achieving the goals and objectives of health manpower development over a given period of time.

Step 6. Plan Drafting Drafting the health manpower development plan.

Requires

- The development of output targets for all activities selected for inclusion in the plan.
- Consideration of the organization, personnel, budget and other resources necessary for the effective implementation of the strategies and activities selected.

Involves

- Drafting the written health manpower development plan so that it contains clear targets, standards, and explanations for the activities selected, and can serve as the basis for monitoring and evaluation of program activities during the implementation phase.

Appendix II: Resources — Strategies and Cautions

Introduction

The health manpower planning framework identified three major components — plan development, facilitation, organization and administration — and focused on the inputs to the planning process — manpower status, motivation, power and resources. Although the four inputs are essentially equal in initiating and maintaining the process, one of the four inputs is "more equal" than the others. The resources of time, money, skilled staff and technology are always finite. Thus, planners must search for strategies to optimize resources.

Below is a list of strategies that state and local planners have used to optimize their scarce resources and the cautions associated with the strategies identified. The strategies reported have worked with various degrees of success in given situations when applied to specific activities. It is a list of options to consider or use. Choice of strategy depends on judgment after first assessing the situation.

Assess Agency Functions

The suggested strategies to employ when starting health manpower planning are:

- Determine what must be accomplished, short range, long range.

- Set priorities.
- Balance time, money, staff and technology against priorities.
- Identify resource constraints for each priority.
- Identify for each priority which resource constraint (time, money, staff or technology) is most critical/which constraint is most easily remedied/which cannot be alleviated.
- Determine the most appropriate strategy to alleviate resource constraints for the priorities established.
- Choose strategy and implement.
- Evaluate strategy, process, and outcome:
  Effect: Did the strategy accomplish objectives?
  Adequacy: Can such strategies meet your resource contraint?
  Efficiency: Was the strategy implemented worth the effort?
  Process: Which actions you took helped or hindered the total effort?

Reallocate Resources

The suggested strategies to maximize resources and the cautions associated with each are:

Cautions

- Know the limits of your authority.
- Confer with counterparts who have attempted this strategy.
- Consult with or gain Board approval.
- Do not attempt what is not within your ability — development of new technology might be better left to others.
- Determine short- and long-range implications.
- Inform staff why this action is being taken.
- Realize that any change in function can be a threat.
- Be willing to revise or adapt reallocation plans if, when tested, they are found unworkable

- Set reasonable deadlines in your new efforts to save time.

Cautions

Utilize In-Kind Services

- Do not limit types and sources: insurance companies, hospitals, universities, banks, professional organizations.
- Know well the mutual expectations.
- Be prepared to reciprocate when asked.

Cautions

Utilize Work Study Programs Within Community

- Plan ahead for skills you will need.
- Be selective; content of work shops and seminars should meet both agency and participants' needs.
- Compensate a capable staff to avoid loss to outside employment opportunities.

Cautions: Volunteer Basis

Utilize Experts

- Recruit experts with talents appropriate to need; managers in private industry, university faculty, health professionals.
- Be aware of political climate in your choice of expert.
- Call upon those that you know have done a good job.
- Approach formally through organization channels to allow the expert more ease in making commitment.
- Allow the expert sufficient time within own busy schedule.
- Offer some form of recognition for help received.
- Keep in mind that your responsibility and judgment must prevail.

Cautions: Paid Consultants

- Define your problem clearly.
- Consider cost.
- Interview prospects; look for skill, objectivity, responsibility.

- Get references from persons whose judgment you trust.
- Do not be unnecessarily impressed by credentials.
- Review any published work.
- Spell out responsibilities of both the agency and the consultant.
- Inform staff and Board.
- Retain your authority in working with consultants.
- Listen, monitor and analyze consultant findings.
- Be prepared to make decisions throughout process.
- Terminate if work is unsatisfactory.

Seek Required Funds

Cautions

- Do your homework; clearly define the purpose for which you are seeking funds.
- Investigate which public/private sources are interested in your project.
- Seek Board members' approval, advice and help in making contacts.
- Make sure you have the time and talent to travel this sometimes long and arduous route.
- Clearly understand the legal and professional requirements in the arrangement.

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